

AMENDMENTS TO THE CLAIMS

This Listing of Claims will replace all prior versions, and listings of claims in the subject Patent Application:

Listing of Claims:

Claim 1. (Currently Amended) 1. A process for producing a liposome suspension comprising:

(a) providing a pre-mixture to an alcohol solvent, wherein the pre-mixture comprises

(i) a phospholipid compound comprising 40%-70% of the pre-mixture and selected from the group consisting of lecithin, ~~phosphatidyletholine (PC)~~, phosphatidylethanolamine (PE), phosphatidylglycerol (PG), phosphatidylinositol, sphingomyelin (SM), phosphatidic acids, a di(C₁₂-C₁₈)acyl derivative of any of the foregoing and a combination of any of the foregoing;

(ii) a cholesterol comprising 10%-30% (w/w) of the pre-mixture; and

(iii) a polyethyleneglycol (PEG)-derived compound comprising 15%-30% (w/w) of the pre-mixture and selected from the group consisting of PEG-PE, methoxy-polyethyleneglycol (mPEG)-PE, a di(C₁₂-C₁₈)acyl derivative of either of the foregoing and a combination of any of the foregoing;

wherein the ratio of the alcohol solvent to the total amount of compounds (i), (ii) and (iii) is greater than 5:1 for increasing extrusion speed and lowering extrusion pressure;

(b) mixing the pre-mixture obtained in step (a) with an aqueous ammonium sulfate solution to form a mixture, wherein the ratio of the amount of the pre-mixture obtained in step (a) to the aqueous ammonium sulfate solution is 1:2~10 (v/v) for increasing extrusion speed and lowering extrusion pressure;

(c) subjecting the mixture obtained in step (b) to a pore-extrusion treatment and forming a pre-liposome suspension; and

(d) dialyzing the pre-liposome suspension obtained in step (c) with a 5% to 15% sucrose aqueous solution such that a liposome suspension containing liposome particles suspended in the liposome suspension is obtained.

Claim 2. (Original) The process as claimed in claim 1, wherein the alcohol solvent used in step (a) is selected from the group consisting of fatty alcohol, glycol, methanol, ethanol, i-propanol, ethylene glycol, propylene glycol and a combination of any of the foregoing alcohol solvents.

Claim 3. (Original) The process as claimed in claim 1, wherein the alcohol solvent used in step (a) is ethanol.

Claim 4. (Original) The process as claimed in claim 1, wherein the compound (i) used in step (a) is selected from the group consisting of PC, dilauroyl PC, dimyristoyl PC, dipalmitoyl PC, distearoyl phosphatidylcholine (DSPC), dioleoyl PC, dilinoleoyl PC, 1-palmitoyl-2-oleoyl PC and a combination of any of the foregoing compounds.

Claim 5. (Original) The process as claimed in claim 1, wherein the compound (i) used in step (a) is DSPC.

Claim 6. (Original) The process as claimed in claim 1, wherein the compound (iii) used in step (a) is selected from the group consisting of PEG-2000-PE, PEG-3000-PE, PEG-4000-PE, PEG-5000-PE, mPEG-2000-PE, mPEG-3000-PE, mPEG-4000-PE, mPEG-5000-PE, a di(C₁₂-C₁₈)acyl derivative of the foregoing compounds and a combination of any of the foregoing compounds.

Claim 7. (Original) The process as claimed in claim 1, wherein the compound (iii) used in step (a) is selected from the group consisting of PEG-2000-DSPE, PEG-3000-DSPE, PEG-4000-DSPE, PEG-5000-DSPE, 1,2-diacyl-SN-glycero-3-phosphatidyl ethanolamine-N-[methoxy(polyethylene glycol)-2000] and 1,2-diacyl-SN-glycero-3-phosphatidyl ethanolamine-N-[methoxy(polyethylene glycol)-3000], wherein the acyl is myristoyl, palmitoyl, stearoyl or oleoyl.

Claim 8. (Original) The process as claimed in claim 1, wherein the compound (iii) used in step (a) is PEG-2000-DSPE.

Claim 9. (Original) The process as claimed in claim 1, wherein the ratio of the amount of the alcohol solvent to the total amount of compounds (i), (ii) and (iii) is 7~10:1(w/v).

Claim 10. (Original) The process as claimed in claim 1, wherein the compound (i) is DSPC and the compound (iii) is PEG-2000-DSPE in step (a).

Claim 11. (Original) The process as claimed in claim 1, wherein step (a) is carried out at 45°C to 70°C.

Claim 12. (Original) The process as claimed in claim 1, wherein step (a) is carried out at 55°C to 65°C.

Claim 13. (Original) The process as claimed in claim 1, wherein step (a) is carried out at 60°C.

Claim 14. (Original) The process as claimed in claim 1, wherein step (b) is carried out at 45°C to 70°C.

Claim 15. (Original) The process as claimed in claim 1, wherein step (b) is carried out at 55°C to 65°C.

Claim 16. (Original) The process as claimed in claim 1, wherein step (b) is carried out at 60°C.

Claim 17. (Original) The process as claimed in claim 1, wherein the equivalent weight of the aqueous ammonium sulfate solution in step (b) is 0.2N to 0.8N.

Claim 18. (Original) The process as claimed in claim 1, wherein the equivalent weight of the aqueous ammonium sulfate solution in step (b) is 0.4N to 0.6N.

Claim 19. (Original) The process as claimed in claim 1, wherein the ratio of the amount of the pre-mixture obtained in step (a) to the aqueous ammonium sulfate solution is 1: 4-8(v/v).

Claim 20. (Original) The process as claimed in claim 1, wherein the pore-extrusion treatment in step (c) passes the mixture obtained in step (b) through a device having apertures of 0.05 μ m to 0.45 μ m.

Claim 21. (Original) The process as claimed in claim 20, wherein the device is selected from the group consisting of a syringe having apertures, a filter containing a ceramic filtration membrane or a polycarbonate filtration membrane and a plate or tube having apertures.

Claim 22. (Original) The process as claimed in claim 1, wherein the pore-extrusion treatment in step (c) is composed of two steps and first passes the mixture obtained in step (b) through a filter having large apertures and then through a filter having small apertures.

Claim 23. (Original) The process as claimed in claim 22, wherein the large apertures are 0.1 μm and the small apertures are 0.05 μm .

Claim 24. (Original) The process as claimed in claim 1, wherein step (d) is carried out at room temperature.

Claim 25. (Canceled)

Claim 26. (Original) A process for producing a liposome-encapsulated drug comprising:

mixing a selected drug and a liposome suspension produced by the process as claimed in claim 1 to produce a liposome-encapsulated drug containing the selected drug in the liposome particles suspended in the liposome suspension.

Claim 27. (Original) The process for producing a liposome-encapsulated drug as claimed in claim 26, wherein the selected drug is selected from the group consisting of an anthracycline antibiotic and a camptothecin anti-tumor drug.

Claim 28. (Original) The process for producing a liposome-encapsulated drug as claimed in claim 27, wherein the selected drug is selected from the group consisting of doxorubicin, daunorubicin, irinotecan and vinorelbine.

Claim 29. (Original) The process for producing a liposome-encapsulated drug as claimed in claim 27, wherein the selected drug is doxorubicin.

Claim 30. (Original) The process for producing a liposome-encapsulated drug as claimed in claim 26, wherein the selected drug and the liposome suspension are mixed at 45°C to 70°C and then reduced to room temperature such that the selected drug is encapsulated in the liposome particles suspended in the liposome suspension.